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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,654	01/11/2001	Mutsuhiro Yamanaka	54024-026	8020

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EXAMINER

QUIETT, CARRAMAH J

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/757,654	Applicant(s) YAMANAKA ET AL.	
	Examiner Carramah J. Quiett	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-8 and 11-28 is/are pending in the application.
- 4a) Of the above claim(s) 6-8 and 11-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment(s), filed on 10/17/2005, have been entered and made of record. Claims 1, 2, 5-8 and 11-28 are pending. Claims 6-8 and 11-28 have been withdrawn. Claims 3, 4, 9 and 10 have been canceled.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 2 and 5 have been considered but are moot in view of the new ground(s) of rejection.

With respect to Paik, the Applicant asserts that a value for each image-pickup optical system (i.e. focal length, in-focus lens position, and aperture value) is not used. Claims 1, 2, and 5 are now rejected under 103(a) as being unpatentable over Paik et al. (U.S. Pat. #6,154,574) in view of Kawaguchi et al. (U.S. Pat. #6,356,304). Respectfully, the Examiner asserts that Paik teaches a value for the focal length and an in-focus lens position. Please see fig. 2 and read col. 4, lines 48-53; col. 9, lines 27-29. Kawaguchi is used to overcome the limitation for an aperture value (col. 2, lines 58-65; col. 8, lines 7-40). Lastly with respect to Olsson, the Applicant's arguments are respectfully moot due to the cancellation of claim 10.

Specification

3. The amendment filed on 10/17/2005 to the title of the invention is acceptable.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. **Claims 1, 2, and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Paik et al. (U.S. Pat. #6,154,574) in view of Kawaguchi et al. (U.S. Pat. #6,356,304).

Regarding **claim 1**, Paik discloses an image processing apparatus (fig. 1) comprising:
an obtaining section (10) for obtaining image data generated by converting an optical image passing through an optical system into digital data (col. 1, lines 45-49; col. 3, lines 17-19). Additionally, please read col. 4, lines 62-67 and col. 9, lines 18-32. Please note that they optical system as pointed out in Paik is a video camera or camcorder (col. 9, lines 29-32).

a processing section (20) for applying a degradation function based on a degradation characteristic of at least one optical element comprised in said optical system to said image data (col. 3, lines 38-64) and restoring said image data by compensating for a degradation thereof (col. 3, lines 17-19);

a degradation function calculating section (fig. 2) for calculating a degradation function on the basis of a focal length, an in-focus lens position and an aperture value of an optical system (col. 4, lines 48-53; col. 9, lines 27-29). Additionally, he states that his digital focusing method and apparatus in an image processing can adjust the focus of an image electronically or digitally by using an infrared device or a lens driving motor (col. 9, lines 33-38); and

a degradation-function storage unit (not shown in figures) for storing the degradation function calculated by the degradation function calculating section (col. 8, line 66 – col. 9, line 17).; wherein

degradation function stored in the degradation-function storage unit is (inherently) applied to obtained image data (col. 8, line 66 – col. 9, line 38).

However, Paik does not expressly disclose a degradation function calculating section for calculating a degradation function on the basis of an aperture value of an optical system. In a similar field of endeavor, Kawaguchi discloses a degradation function calculating section (fig. 6A) for calculating a degradation function (MTF, col. 2, lines 58-65) on the basis of an aperture value of an optical system (col. 8, lines 7-40). In light of the teaching of Kawaguchi, it would have been obvious to one of ordinary skill in the art at the time the invention of Paik was made to provide an image processing apparatus wherein said degradation function is also based on an aperture value in order to correct the brightness of the image, thereby improving image resolution (Kawaguchi, col. 2, lines 1-7).

For **claim 2**, Paik, as modified by Kawaguchi, discloses an image processing apparatus wherein said degradation function depends on a position of each pixel. Paik's digital focusing apparatus (in fig. 2) divides a defocused image into sub-images (pixels) of a predetermined size (Step 30) and then estimates an edge direction of each of the divided sub-images (Step 32 – also see fig. 3).

For **claim 5**, Paik, as modified by Kawaguchi, discloses an image processing apparatus wherein said degradation function corresponds to a plurality of pixels (col. 3, lines 60-64; col. 5, lines 19-24; col. 9, lines 18-32).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carramah J. Quiett whose telephone number is (571) 272-7316. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CJQ

January 6, 2006



NGOC-YEN VU
PRIMARY EXAMINER